Five-Year Review Report
62nd Street Superfund Site
Hillsborough County, Florida

March 30,1999
Revision No. 0

Submitted by

The David J. Joseph Company
and
Lafarge Corporation

Prepared by

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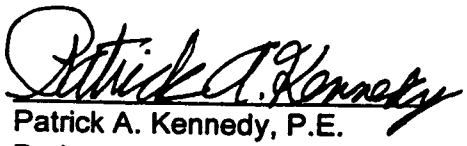

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EPA Five-Year Review Signature Cover

Site name: 62nd Street Superfund Site			EPA ID: FLD980728877
Region: 4	State: Florida	City/County: Hillsborough County	
LTRA (Circle): **Y** **(N)**		Construction completion date: 06/13/95	
Fund/PRP Lead: PRP			NPL status: Final
Lead Agency: EPA			
Who conducted the review? (EPA Region, State, or contractor): Contractor			
Date review conducted: From: 02/15 To: 03/31/99			Date of site visit: 03/01/99
Whether first or successive review: First			
Circle: **(Statutory)** Policy		Level of review: 1	Due date: 03/31/99
Trigger for this review: Actual RA onsite construction			

Deficiencies:

Recommendations:

Protectiveness Statement:

Other Comments:

Signature of EPA Regional Administrator of Division Director, and Date

Signature

Date

Name and Title

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LIST OF EXHIBITS

LIST OF ABBREVIATIONS/ACRONYMS

ARARs	Applicable or Relevant and Appropriate Requirements
CD	Consent Decree
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
EPA	Environmental Protection Agency, Region 4
ESD	Explanation of Significant Differences
F.A.C.	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
FS	Feasibility Study
HCEPC	Hillsborough County Environmental Protection Commission
MCLs	Maximum Contaminant Levels
NCP	National Contingency Plan
NPL	National Priorities List
POTW	Publicly Owned Treatment Works
PRPs	Potentially Responsible Parties
RA	Remedial Action
RAMP	Remedial Action Master Plan
RAO	Remedial Action Objective
RAWP	Remedial Action Work Plan
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RD/RA	Remedial Design/Remedial Action
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
RPM	Remedial Project Manager
SARA	Superfund Amendments and Reauthorization Act
SDWA	Safe Drinking Water Act
S/S	Solidification/Stabilization
SCTLs	Soil Cleanup Target Levels
SPLP	Synthetic Precipitation Leaching Procedure
SSLs	Soil Screening Levels
TCLP	Toxicity Characteristic Leaching Procedure
UAO	Unilateral Administrative Order
USGS	United States Geological Survey

I INTRODUCTION

At the request of The David J. Joseph Company and Lafarge Corporation, Ardaman & Associates, Inc., has conducted a five-year review of the Remedial Action (RA) program implemented at the 62nd Street Superfund Site in Hillsborough County near Tampa, Florida. The primary purpose of the review was to determine whether the remedy remains protective of human health and the environment. Five-year review reports identify deficiencies, if any, and provide recommendations to address them. Five-year review reports document the evaluation of the implemented remedy as well as the operation and maintenance at a remediated site. The continued appropriateness of the RA objectives and cleanup levels is also addressed.

This review is required by statute. Section 121(c) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and Section 300.430(f)(4)(ii) of the National Oil and Hazardous Substance Contingency Plan (NCP), require that periodic (no less often than every 5 years) reviews be conducted for sites where hazardous substances, pollutants, or contaminants remain at the site above levels that allow for unlimited use and unrestricted exposure following the completion of all remedial actions.

This is the first five-year review for the 62nd Street Superfund Site. The trigger for this statutory review is the start of actual onsite RA construction on September 30, 1993. The review is required because the site does not allow unlimited use and unrestricted exposure after attainment of performance standards in the ROD and subsequent ESDs. Site access is restricted to protect the integrity of the top cover system and to prevent exposure to treated soil and waste containing cadmium, chromium, lead and other heavy metals, which remain on site.

EPA has established a tiered approach to conducting 5-year reviews, which allows reviews to be tailored to the status of activities onsite and to site-specific considerations. Four levels of review have been established, namely Levels 1, 2, 3, and 1a. The review level dictates the type of activities that should take place. Level 1 represents the fundamental review type, and is appropriate for most sites where construction has been completed. Levels 2 and 3 represent enhanced levels of review, needed to address site-specific considerations. A recalculation of risk is a typical feature of a Level 2 review. A new risk assessment is a typical feature of a Level 3 review. Level 1a review, which was developed for sites with an ongoing response, generally applies to sites where construction is not complete. A site visit, interviews, and an ARARs review are not needed for Level 1a review. After consultation with Mr. Mark Fite of EPA on February 12, 1999 and confirmation by a memorandum to EPA on February 23, 1999 (see Attachment A), a Level 1 review was conducted at the 62nd Street Superfund Site.

II BACKGROUND

The 62nd Street Superfund Site was first proposed for inclusion on the National Priorities List (NPL) in December 1982. Table 1 describes significant events leading to the 62nd Street Superfund Site being added to the National Priorities List in September 1983.

Physical Characteristics

Site Location

The 62nd Street Superfund Site is located within Section 10 of Township 29 South, Range 19 East, in Hillsborough County, Florida. The site is located south of Interstate 4 and north of Columbus Drive, on the east side of the City of Tampa. More specifically, the site is located immediately west of 62nd Street and 400 to 500 feet north of Columbus Drive.

The approximate boundary of the 62nd Street Superfund Site is superimposed on a reproduction of the United States Geological Survey (USGS) quadrangle map of Tampa, Florida in Figure 1. The USGS map was originally published in 1956 and was photorevised in 1981. The site location plan shown in Figure 1 has a scale of 1 inch = 2000 feet.

The site is located in the East Lake/Orient Park neighborhood, which has a population of approximately 5,500 people.

Site Area/Topography

The site occupies approximately 5.24 acres (292 feet by 792 feet). The areas of former waste disposal include approximately 4.5 acres. Prior to remediation, the elevation of the site ranged from +30 to +39 feet (NGVD). The site is currently graded to a maximum elevation of approximately +51 feet (NGVD) with average side slopes of approximately 4.5H:1V. The site is currently grassed.

A March 1998 aerial photograph of the site from First American Real Estate Solutions is provided as Figure 2.

Land and Resource Use

In the late 1960's, the 62nd Street Superfund Site was operated as a borrow pit where sand was removed for use as fill material. When the borrow operations ceased, the owner of the site allowed several companies in the Tampa area to use the excavated pits for disposal of various waste materials including, but not limited to, construction and demolition debris, cement kiln dust, battery wastes, and waste materials from an automobile shredder. The owner ceased the dumping operation in 1976; however, unauthorized disposal of household garbage and construction debris continued after that date. A former fish farm with a series of small shallow ponds, which is not currently operated, is located west of the site. An 80-acre marshland that drains into a nearby lake is located adjacent to the fish farm. Adjacent land use to the east includes residences and a landscape nursery. Adjacent land use to the south includes residences, light commercial and industrial operations and an automobile junkyard. The land north of the site is currently vacant and undeveloped.

The site is currently vacant and access is restricted by fencing and locked gates. The site is posted as a hazardous waste disposal site.

Although some residents in the vicinity of the site obtain their potable water from Floridan aquifer wells, the Floridan aquifer below the 62nd Street Superfund Site was not impacted by the waste disposal activities and, therefore, EPA did not mandate remediation of the Floridan aquifer. No known potable water wells are completed in the unconfined surficial aquifer near the site.

Contaminants

Contamination of soil and groundwater at the 62nd Street Superfund Site was a result of past disposal practices through which waste was dumped into open pits where sand had been excavated for sale as construction material.

Wastes buried at the 62nd Street Superfund Site could be grouped into two general categories: cement waste and non-cement waste. Cement waste referred to materials consisting of off-spec cement, cement kiln dust and cement slag. Non-cement waste consisted of waste materials from an automobile shredder, battery wastes, and other wastes. Solidification/sstabilization (S/S) of the non-cement waste was mandated by the ROD; however, S/S of the cement waste was not required because the material presented little threat through direct contact or leaching to groundwater.

Previous soil and groundwater investigations at the 62nd Street Superfund Site revealed the presence of hazardous substances in the non-cement waste that posed a potential threat to public health. EPA designated the following possible routes for these substances to enter the human body:

- direct contact with soils
- ingestion of groundwater
- inhalation of airborne particulates

The non-cement waste at the 62nd Street Superfund Site, which was reported in the ROD to have a volume of approximately 48,000 cubic yards, was considered to be a potential risk to human health due to the presence of the following “contaminants of concern” identified in the ROD: antimony, arsenic, cadmium, chromium, copper, lead and polychlorinated biphenyls (PCBs). Extraction Procedure (EP) toxicity tests performed on three waste samples recovered from the site during the RI indicated that one of the three samples was EP toxic for lead (See Fred C. Hart & Associates’ report titled "Final Remedial Investigation Report, 62nd Street Superfund Site, Tampa, Florida", revised September 10, 1987).

During the RI/FS programs, unfiltered groundwater samples from the surficial aquifer at and downgradient of the site were found to contain cadmium, chromium and lead at levels exceeding the Maximum Contaminant Levels (MCLs) of the Safe Drinking Water Act (SDWA). Chromium was the most common contaminant that exceeded the MCLs; the second most common contaminant was lead. However, as discussed in detail in Volume II of the RD Report, groundwater sampling and analyses by both the RD Supervising Contractor and EPA during the RD program indicated that the concentrations of chromium, lead and cadmium in the off-site wells were actually below the groundwater cleanup levels established in the ROD.

The EPA determined that none of the contaminants of concern were above the MCLs in any of the onsite or offsite artesian Floridan aquifer wells.

Sediment and surface water samples recovered from surrounding offsite areas indicated no contamination and no threat to human health or the environment.

Initial Response

As a result of complaints of fish kills occurring in the fish breeding ponds located west of the 62nd Street Superfund Site, Hillsborough County Environmental Protection Commission (HCEPC) issued a notice to cease all disposal activities at the site. No cleanup activities were conducted at the site prior to the ROD and the implementation of the Remedial Design.

III DEVELOPMENT AND IMPLEMENTATION OF THE REMEDY, AND OPERATION AND MAINTENANCE

After the site was added to the NPL, a number of investigations and studies were conducted for the site. Table 2 describes the chronology of significant environmental investigations, design and remediation activities for the 62nd Street Superfund Site.

Remedy Selection

Remedial Action Objectives

The purpose of the Remedial Action Objectives (RAOs) is to reduce the risks associated with exposure to contaminated onsite soils and groundwater in the surficial aquifer on site and off site. The RAOs are:

- to excavate and treat non-cement waste and contaminated soils to minimize their potential to leach contaminants to groundwater;
- to minimize rainfall infiltration through the wastes and leachate generation;
- to preclude exposure to the treated waste and soils; and
- to recover and treat onsite and offsite groundwater in the surficial aquifer to meet water quality standards.

The criteria for contaminated soils are presented in Table 3. Criteria for soils requiring cleanup were based on consideration of health effects and leaching to groundwater. The original lead cleanup criterion for contaminated soils at the site, as stipulated in the ROD, was 17 mg/kg for soils beneath and adjacent to the non-cement waste and 170 mg/kg for soils beneath and adjacent to the cement waste. However, as discussed in an ESD issued by the EPA on September 20, 1991, further analyses of site-specific data necessitated a revision of the soil cleanup criterion for lead to 224 mg/kg for soils adjacent to and underlying the non-cement waste as well as for soils adjacent to the cement waste. In addition to the criterion for lead, the ESD also

required cadmium and chromium in the soils to be below the Toxicity Characteristic Leaching Procedure (TCLP) regulatory threshold limits of 1.0 mg/l for cadmium and 5.0 mg/l for chromium.[1]

The ROD established cleanup criteria for contaminated groundwater are presented in Table 3. The criteria for cadmium and chromium were based on the MCLs from Primary Drinking Water Standards. The criterion for lead was based on the EPA-recommended cleanup level for lead in groundwater.

Selected Remedy

Based upon consideration of the CERCLA requirements, as amended by SARA, and the National Contingency Plan (NCP), detailed analyses of feasible alternatives, and comments by the public, the EPA selected a remedy for the site, which is presented in the ROD promulgated on June 27, 1990. [EPA/ROD/RO4-90/070]. The selected remedy consisted of the following directives:

- Excavation of non-cement waste and contaminated soils.
- Screening of the excavated materials for large objects such as automobile tires, metal wires, discarded household items and concrete blocks. Decontamination of these oversized objects (if necessary) and disposal off-site or by recycling, as appropriate.
- Solidification/stabilization of non-cement waste and contaminated soils with suitable fixing agent(s) to reduce the toxicity and/or mobility of the contaminants of concern.
- Extraction and treatment of contaminated groundwater from the surficial aquifer.
- Capping the site with a top cover system.
- Institutional controls including land use restrictions to ensure the integrity of the top cover system and preclude exposure to treated waste and soils.

Under the selected remedy, the onsite contaminated soils and non-cement waste would be excavated and treated by the S/S technique, and the solidified materials would be placed back into the excavation. No treatment of the cement waste was mandated by the ROD. The ROD further required that both onsite and offsite groundwater from the surficial aquifer that exceeded the cleanup standards for chromium, lead and cadmium be recovered and treated. The selected remedy also called for the installation of a top cover system, which consisted of a soil liner component, a geomembrane liner component, a drainage sand cover, and a grass cover.

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[1] During a RD meeting on October 30, 1992 in the EPA's office in Atlanta, Georgia, the EPA agreed that soil clean-up criteria of 20 mg/kg for cadmium and 100 mg/kg for chromium would be equivalent to or more stringent than the TCLP criteria. At these metal concentrations, if all the cadmium and chromium in the soils were extracted by the TCLP tests, the metal concentrations in the extraction medium would be at or below the regulatory threshold limits for cadmium and chromium.

Remedy Implementation

Remedial Design

Based on the directives in the ROD, a design was developed for site remediation by the RD Supervising Contractor (Ardaman & Associates, Inc.) retained by the PRPs. The basis for development of the design as well as the criteria for its implementation were presented in a RD Report. A set of RD Drawings that illustrated the remediation concept and scheme was also prepared as part of the RD tasks.

Major RD activities completed for the site included installation of six groundwater monitor wells at the perimeter of the site, sampling and analyses of existing and new monitor wells, performance of a groundwater treatability study, excavation of five test pits within the site boundary, performance of a soil/waste treatability study, performance of eleven soil borings and design of a soil-bentonite cut-off wall at the perimeter of the site, treatment design for onsite groundwater, non-cement waste and contaminated soil, design of a top cover, and design of a recovery system for off-site groundwater. The RD included technical objectives to determine whether the RA program achieved the Remedial Action Objectives (RAOs).

The RD for the 62nd Street Superfund Site was developed in four stages (30% completion, 60% completion, 90% or pre-final completion and final completion). Inputs and review comments provided by the EPA and the Oversight Contractor at each design stage, where applicable, were incorporated into the final RD Report and Drawings, which were submitted to the EPA and FDEP on February 11, 1993 and subsequently approved by the EPA on February 25, 1993.

The RD incorporated all design elements that were required by the directives of the ROD plus a soil-bentonite cut-off wall around the perimeter of the site. The purpose of the proposed cut-off wall was to facilitate the dewatering operation during site remediation and to reduce long term migration of groundwater through the solidified materials and cement waste beneath the site after site remediation. Although groundwater sampling and analyses by both the RD Supervising Contractor and EPA during the RD program indicated that the concentrations of chromium, lead and cadmium in the offsite wells were below the groundwater cleanup levels established in the ROD and that a recovery and treatment system for offsite groundwater might not be necessary, it was agreed that the RD would proceed as if off-site groundwater contamination existed; however, implementation of the system would be deferred pending the results of a quarterly groundwater monitoring program to collect additional data from selected offsite surficial aquifer monitoring wells.

Remedial Action

The Remedial Action (RA) Report describes various remediation activities completed at the site and presents the testing data obtained throughout the RA program. The remediation activities were conducted in accordance with the technical objectives and criteria presented in the Remedial Design (RD) Report prepared by Ardaman & Associates, Revision No. 0, dated February 11, 1993, and the implementation procedures and schedules outlined in the Remedial Action Work Plan (RAWP), Revision No. 1, dated June 9, 1993.

Of the numerous Potentially Responsible Parties (PRPs) identified for the 62nd Street Superfund Site, only The David J. Joseph Company and Lafarge Corporation actively participated in the remediation of the site throughout the Remedial Design/Remedial Action (RD/RA) programs. The jurisdictional regulatory agencies consisted of the United States Environmental Protection Agency - Region 4 (EPA) and the Florida Department of Environmental Protection (FDEP)[1] . The Oversight Contractor representing EPA was CDM Federal Programs Corporation. The RD/RA Supervising Contractor for this project was Ardaman & Associates, Inc. The RD/RA Contract Laboratory for analytical testing was Thornton Laboratories, Inc. Various Specialty Contractors also participated in performance of various tasks associated with the RA program.

The configuration of the completed remedial action improvements on the site is shown in Figure 3. The construction and completion dates and quantities for the remedial action are presented in Table 2.

Operation and Maintenance (O&M) Requirements

Maintenance and monitoring activities began at the site upon acceptance of the Remedial Action Report, Operation & Maintenance Plan and Performance Monitoring Plan by the United States Environmental Protection Agency – Region 4 (EPA) in September 1995. Routine monitoring and maintenance activities performed at the site consist primarily of site inspections, mowing and weeding. The annual monitoring program for the site consists of sampling and analyses of groundwater samples from existing nearby monitoring wells screened within the surficial aquifer and the Floridan aquifer. The locations of the monitoring wells which are to be sampled annually are shown in Figure 4.

O&M Activities

Maintenance activities and monitoring data for the 62nd Street Superfund Site in 1995,1996,1997 and 1998 were documented in annual reports submitted to the EPA on January 30,1996, January 30, 1997, March 5, 1998 and February 25, 1999, respectively.

Site Inspections and Maintenance Activities

A representative from the Tampa office of Ardaman & Associates, Inc., made casual observations of the 62nd Street Superfund Site a number of times during 1998. In addition, engineers from our Orlando office visited the site in October and November of 1998. The purposes of these site visits were to observe the general conditions of the site and to inspect the top cover and drainage ditches for signs of erosion damage. In addition, the conditions of the grass cover, security fence, entrance gates, warning signs and riprap were visually inspected.

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[1] Formerly, Florida Department of Environmental Regulation (FDER).

IV FIVE-YEAR REVIEW FINDINGS

Five-Year Review Process

The five year review was conducted by the following team from Ardaman & Associates' Orlando, Florida office:

- Dr. John E. Garlanger, P.E., Principal
- Mr. Francis K. Cheung, P.E., Senior Project Engineer and O&M Site Manager
- Mr. Patrick A. Kennedy, P.E., Project Engineer

The review was conducted between February 15 and March 30, 1999.

A Level 1 five-year review was performed including the following tasks:

- Document Review: Remedial Action and O&M Documents
- Document Review: Remedial Action Objectives and ARARs
- Site Visit
- Interviews
- Report Preparation

Although there were a number of public meetings organized by EPA during the course of the RD/RA programs, EPA has not scheduled a public meeting prior to the preparation of this five-year review report.

Documents Reviewed

The documents reviewed are listed in Attachment B.

Site Visit

The site visit was conducted on March 1, 1999. The site visit consisted of a walk-through of the entire site by Mr. Francis K. Cheung, P.E. and Mr. Patrick A. Kennedy, P.E. and taking of photographs documenting existing conditions. The site was also observed from 62nd Street and offsite adjacent areas were observed from the site. A site checklist form, noting the condition of the site and the remedial action, was completed. Notes of the site visit, the site checklist and selected photographs are included as Attachments C, D and E, respectively.

The top cover at the site, which consisted of a soil liner component, a geomembrane liner component, a drainage sand cover, and a grass cover, was visually inspected and appeared to be in good condition with no significant erosion or disturbance. The grass cover was well

established with minimal bare spots. Some shallow tire ruts, however, were observed near the southern part of the site, apparently from unauthorized vehicular access to the site.

Interviews

One adjacent current resident and one former employee at the site were interviewed during the site visit on March 1, 1999.

The current property owners adjacent to the subject property were identified from the Hillsborough County Property Appraiser's database, accessed through the Internet. The ownership of adjacent property is summarized in Table E-1 and adjacent parcels are mapped in Figure E-1. Telephone numbers for adjacent residents and owners were identified from available telephone directories.

The individuals identified in the site checklist (Attachment D) were interviewed. Interview reports are included as Attachment F to this report. The persons interviewed are representative of the neighbors of the subject site. Mr. Joseph Diaz owns the former fish farm property west of the 62nd Street Superfund Site. Mr. Robert Steele is the manager of Oakwood Wholesale Nursery, which borders the east side of the site. Ms. Nancy Westcott is a resident who lives across from the entrance gate on 62nd Street. Mr. Dan McCormick provided input for the property owner along the south side of the 62nd Street Site. The property north of the 62nd Street Superfund Site is currently undeveloped and vacant. We also interviewed a representative of the local regulatory agency (Hillsborough County Environmental Protection Commission).

No problems significantly impacting the effectiveness of the remedial action were brought to our attention through the interviews.

Remedial Action Objectives Review

Table 3, "Chemical-Specific ARARs," presents changes in applicable or relevant and appropriate requirements (ARARs) from the ROD to the date of the five-year review.

Groundwater cleanup levels in the ROD were based on Primary Drinking Water Standards and Maximum Contaminant Levels (MCLs) in effect at the time of the ROD. The National Drinking Water Standards for cadmium and chromium were revised subsequent to the issuance of the ROD. The MCL for cadmium was lowered from 10 to 5 µg/l, while the MCL for chromium was raised from 50 to 100 µg/l. The MCL for lead remained at 15 µg/l. The Florida Groundwater Standards (62-520.420, F.A.C.) reference the State Drinking Water Standards (62-550.310, F.A.C.), which are the same as the National Drinking Water Standards. Results of the four annual monitoring events (see Data Review) show that the groundwater concentrations in the monitoring wells do not exceed the revised standard.

The findings of Ardaman & Associates' 12/16/94 report, Off-Site Groundwater Monitoring Program, 62nd Street Superfund Site, Tampa, Florida, would not have been changed based on the new standards. This report supported the decision not to require treatment of offsite groundwater.

Soil contamination standards were specified in the ROD and were subsequently modified by EPA, as shown in Table 3. Soil contamination levels for treatment implemented in the RA program were 20 mg/kg for cadmium, 100 mg/kg for chromium, and 224 mg/kg for lead.

Subsequent to the issuance of the ROD, EPA has developed soil screening guidance (Soil Screening Guidance: Technical Background Document, May 1996) and the Florida Department of Environmental Protection (FDEP) has developed soil cleanup target levels (SCTLs) for brownfield sites (62-785, F.A.C.).

The soil screening levels (SSLs) from EPA are guidance levels for preliminary site screening, and are not regulatory standards. Sites passing the generic SSLs for the appropriate pathways would typically require no further study under CERCLA. Soil containing contaminants above these screening levels are evaluated to determine appropriate cleanup levels. While SSLs are based on conservative assumptions appropriate of a screening level, cleanup levels consider actual site conditions and generally allow for higher contaminant concentrations. The Florida Brownfields Rule in 62-785, F.A.C., expressly provided that it is not applicable to CERCLA sites such as the 62nd Street Superfund Site. However, this rule would be "relevant and appropriate" to consider for soils requiring cleanup.

The pathway for this site with the most stringent requirements is leaching and migration to groundwater. The levels for both the EPA Soil Screening Guidance and the Florida Brownfields Rule are 8 mg/kg for cadmium, 38 mg/kg for chromium, and 400 mg/kg for lead.

Based on a review of the verification data for excavation of non-cement waste and contaminated soils (Table 5-1 of the 07/13/95 Remedial Action Report), the cadmium concentrations were all below the SSLs and SCTLs set forth in the newer guidance documents and regulations. Although the chromium concentrations were greater than the new screening level of 38 mg/kg in some cases, this is simply a screening level, not an actual cleanup standard. The soils at the 62nd Street Site have already been treated to prevent leaching to groundwater. Moreover, the soil-bentonite cut-off wall, the top cover and low hydraulic conductivity of the stabilized waste and soil provide adequate additional protection against leaching and migration to groundwater. The latest EPA soil lead screening level (i.e., 400 mg/kg) is higher than the level (i.e., 224 mg/kg) implemented during the RA program.

The TCLP standards for cadmium, chromium and lead have not been modified since the issuance of the ROD. Thus, the waste and contaminated soils which met these criteria during the RA program would also meet the current standards.

The treatment of groundwater and discharge to the City of Tampa POTW has already been completed. The effluent from the site met all City of Tampa requirements. Analytical results of groundwater discharged to the City were not reviewed against the current standards.

There are no site-specific risk-based remedial action objectives. No risk recalculations or risk assessments were performed as part of the five-year review.

To preclude exposure to the treated wastes and soils, the RAO is still relevant because the S/S wastes and soils remain on the site. This RAO is achieved through the use of a composite liner

(i.e., soil and geomembrane liner), protective soil layer and grass cover, which remain in good condition with no significant erosion or disturbance. This RAO is further achieved by controlling site access and land use.

Data Review

The annual groundwater monitoring data for 1995 through 1998 were reviewed. These are the only post-remediation data required by EPA and, thus, available to document the effectiveness of the remedy. Laboratory testing for cadmium, chromium and lead concentrations is performed for samples from ten monitoring wells on and off site (see Figure 4 for locations). In most cases, both unfiltered and field-filtered samples were collected to analyze total and dissolved metals concentrations respectively.

The analytical data and the field parameters are tabulated in Attachment G. Attachment G also provides the current MCLs for the parameters analyzed. Quality control samples were included in the monitoring program but the results from field blanks, equipment blanks and duplicates have not been included in the table.

Table 4 presents the maximum levels for each sampling period for cadmium, chromium and lead (the contaminants of concern for groundwater). The table also shows the monitoring well from which the sample with the maximum value was obtained.

The results from four years of sampling show that the groundwater quality standards for cadmium, chromium and lead have consistently been met by a comfortable margin for both filtered and unfiltered samples at all locations tested. Because so many of the results were below the detection limits of the methods used, no meaningful analysis of trends could be performed.

V CONCLUSIONS

The following is a summary based on the findings of the five-year review for the 62nd Street Superfund Site:

Appropriateness of Remedial Action Objectives

Our review of the RAOs and ARARs demonstrated that the RAOs are still appropriate for protecting human health and the environment. Although there have been changes in regulatory requirements and guidelines since the ROD and the RA, none of these changes would call into question the effectiveness of the completed remedial action. The RAO relative to groundwater quality should be changed to reference the current MCLs for cadmium and chromium and the current action level for lead.

Achievement of Remedial Action Objectives

The remedial action has been completed and all RAOs have been achieved.

Whether the Remedy Is Effective and Functioning As Designed

The remedy is effective and functioning as designed. Groundwater monitoring data indicate that groundwater quality meets the criteria for cadmium, chromium and lead, which are the contaminants listed in the ROD and the RD. The site visit supports the conclusion that the remedial action improvements are intact and functioning. The interviews show that no significant issues have been raised by interested parties including neighbors and the local regulatory agency.

Breaches in security provided by the fencing and posting of the site were noted. These have not progressed to a level that would impact the effectiveness of the remedy. Because The David J. Joseph Company, Lafarage Corporation or Ardaman & Associates, Inc., have no legal authority to control access to the site, the security issue for the site is best addressed by EPA.

Adequacy of O&M

The O&M requirements are adequate for the site, and are, in general, being adequately implemented. Our site visit and interviews suggest that site access should be monitored more closely and the condition of vegetation on the site needs to be observed to determine when to mow. Because there has been no exceedance of applicable groundwater standards, there is no justification to increase the monitoring frequency.

Early Indicators of Potential Remedy Failure

No early indicators of problems that could lead to remedy failure were observed or called to our attention, with the possible exception of site security. Site security is addressed in our recommendations.

VI DEFICIENCIES

Balls, trash and tire ruts observed on the site indicate that security fencing, gates and signs are not preventing access to the site by unauthorized persons. Some access seems to be through the gate on the south side of the property, which was open during our site visit. At this time, the activities by intruders did not appear to have affected the integrity of the top cover system or the soil-bentonite cut-off wall.

Although the identified deficiency noted above does not currently prevent the remedy from being protective, EPA should determine additional appropriate security measures and enforce access restriction to the site.

VII RECOMMENDATIONS

The recommendations from our five-year review are presented in Table 5. Recommended parties responsible for action items and milestone dates, where applicable, are provided in the table.

VIII PROTECTIVENESS STATEMENT

Based on our five-year review, the remedy remains protective.

IX NEXT REVIEW

Another five-year review will be required because the remedy has been completed and treated waste and soils with metals concentrations above levels that allow unrestricted access and use remain on the site. Under these circumstances, a statutory review is required every five years.

The next five-year review should focus on the effectiveness of implementation of the recommendations in limiting access to the site.

Table 1

Chronology of NPL Listing

Date	Event
11/30/76	As a result of complaints of fish kills occurring in the fish breeding ponds located west of the 62nd Street Site, Hillsborough County Environmental Protection Commission (HCEPC) issued a notice to cease all disposal activities at the site.
1982	Periodic environmental sampling was conducted by HCPEC and FDER. One groundwater sample taken from the surficial aquifer showed total chromium concentrations exceeding the groundwater standard in Chapter 17-3, F.A.C.
12/30/82	Proposed NPL listing
06/83	A Remedial Action Plan (RAMP) for the site was prepared and a preliminary risk assessment was performed for EPA by NUS Corporation. The RAMP indicated no immediate concern over drinking water contamination, but recommended continued groundwater monitoring and the performance of a Feasibility Study (FS) to evaluate remediation alternatives.
09/08/83	Final NPL listing

Table 2

Chronology of Remedy Development and Implementation

Date	Event/Activity/ Document/Milestone
1984	EPA and FDER entered into a Cooperative Agreement to jointly direct a Remedial Investigation/Feasibility Study (RI/FS) for the site.
1984/1986	A Remedial Investigation (RI) was conducted for the site.
11/24/86	Final Remedial Investigation Report, Fred C. Hart Associates, Inc.
09/10/87	Revised Final Remedial Investigation Report, Fred C. Hart Associates, Inc.
1987	Additional sampling of on-site monitoring wells was performed.
1988	A FS was conducted for the site.
1989	Additional sampling of nearby domestic wells was performed by the Florida Department of Health and Rehabilitative Services (HRS).
1990	RI/FS information was released to the general public. Public meetings were held followed by the preparation of a Responsiveness Summary.
06/27/90	Record of Decision EPA/ROD/R04-90-070
06/13/05	A Scope of Work was prepared to guide development of a RD/RA program.
04/91–05/91	Unilateral Administrative Order (UAO) was issued in April and became effective in May.
08/21/91 –08/23/91	Consent Decree signed by PRPs
09/20/91	Explanation of Significant Differences to change cleanup criterion for lead in soils and to stipulate how construction and demolition debris would be disposed
11/05/91	Ardaman & Associates' Remedial Design Work Plan submitted to EPA.
06/15/05	The CD was entered by Court and the UAO was rescinded for those PRPs signing the CD.
02/11/93	Ardaman & Associates' Remedial Design Report submitted to EPA.
09/93	Remedial Action (RA) program began
09/20/93	Construction of soil-bentonite cut-off wall began
09/25/93	Construction of soil-bentonite cut-off wall completed *[2,100 feet of cut-off wall]*
10/93	Excavation and treatment of non-cement waste and contaminated soils began
10/93– 07/94	Treatment and disposal of on-site groundwater *[2 Mgal consumed in S/S process; 4.5 Mgal to POTW]*
05/24/94	Pre-Final Inspection by EPA RPM
07/94	Excavation and treatment of non-cement waste and contaminated soils completed *[96,000 tons (61,800 CY) excavated]*
12/16/94	Ardaman & Associates' Off-Site Groundwater Monitoring Program
02/95	Construction of top cover began
05/95	Completion of top cover *[4.5 acres]*
05/04/95	Ardaman & Associates' Operation & Maintenance Plan and Performance Monitoring Plan submitted to EPA.
06/13/95	Final Inspection by EPA Remedial Project Manager (RPM)
06/29/95	Record of Decision EPA/AMD/R04-95-231 deleted requirement to treat offsite groundwater.
07/13/95	Ardaman & Associates' Remedial Action Report submitted to EPA.
09/95	EPA Approval of O&M and Performance Monitoring Plan

Table 3

Chemical Specific ARARs

Groundwater								
Contaminant	ROD Dated 06-20-90				Current			
	Cleanup Level (µg/l)	Source	Date	Status	ARAR (µg/l)	Source	Date	Status
Cadmium	10	SDWA	1988	relevant and appropriate	5	SDWA Amendments	08-06-96	relevant and appropriate
Chromium	50				100			
Lead	15				15			

Soil									
Contaminant	RA Cleanup Level (mg/kg)			Current EPA Generic SSLs (mg/kg)			Current SCTLs in 62-785, F.A.C.		
	ROD Dated 06-20-90	ESD Dated 09-20-91	EPA Meeting Dated 10-30-92	Ingestion	Inhalation	Migration to Groundwater 20 DAF (mg/kg)	Direct Exposure (mg/kg)		Leachability to Groundwater (mg/kg)
							Residential Use	Industrial Exposure	
Non-Cement Waste									
Cadmium	0.3	TCLP	20	78	1,800	8	75	1,300	8
Chromium	9	TCLP	100	390	270	38	290	430	38
Lead	17	224		400	*	*	500	920	**
Cement Waste									
Cadmium	3	TCLP	20						
Chromium	90	TCLP	100						
Lead	170	224							

Notes:

ARARs - Applicable or Relevant and Appropriate Requirements
DAF - Dilution Attenuation Factor
ESD - Explanation of Significant Differences
ROD - Record of Decision
SSLs - Soil Screening Levels
SCTLS -Soil Cleanup Target Levels
SDWA - Safe Drinking Water Act
SPLP - Synthetic Precipitation Leaching Procedure
TCLP - Toxicity Characteristics Leaching Procedure

* A screening level of 400 mg/kg has been set for lead based on Revised Interim Soil Lead Guidance for CERLA Sites and RCRA Corrective Action Facilities (USEPA, 1994)

** Leachability values may be derived using the SPLP test to calculate site-specific SCTLs.

Table 4

Monitoring Data Review

Contaminant	Sampling Period 1 (01-96)		Sampling Period 2 (12-96)	
	Maximum Level (µg/l)	Monitor Wells	Maximum Level (µg/l)	Monitor Well
Cadmium	0.4	MW-12S	0.1	MW-12S
Chromium	7	MW-26	5	MW-13D
Lead	3	MW-26	2	MW-12S MW-24
Contaminant	**Sampling Period 3 (01-98)**		**Sampling Period 4 (02-99)**	
	Maximum Level (µg/l)	**Monitor Well**	**Maximum Level (µg/l)**	**Monitor Well**
Cadmium	0.3	MW-12S	<2	All
Chromium	10	MW-13D	7	MW-22
Lead	2	MW -13S	<10	All

Table 5

List of Recommendations

Recommendations	Party Responsible	Milestone Data
Monitor the site more frequently for intruders and evidence of unauthorized access.	PRPs/A&A	periodic
Contact adjoining property owners to the south and advise that access is prohibited, that tanks and other items are not to be stored on the site and that the south entrance gate should remain closed.	EPA	04/30/99
Enforce site access and land use restrictions when necessary	EPA	as needed
Mow the site and trim vegetation along fence lines.	PRPs/A&A	as needed